

# 9. ECOSYSTEM STATUS SUMMARY

*"We abuse the land because we regard it as a commodity belonging to us.  
When we see land as a community to which we belong,  
we may begin to use it with love and respect."*<sup>13</sup>

## 9-1 General

Information from previous sections is consolidated in this section to provide a brief "snapshot" of Fort Richardson's past and present ecosystem components. Conclusions regarding their current and future status along with their ability to support the needs of the military and the public are largely subjective. It is anticipated that findings from recently completed and ongoing studies, along with the ever increasing use of GIS technology, will enable USARAK to more accurately evaluate ecosystem components, health, and trends.

## 9-2 Water Quality

The quality of surface water on Fort Richardson appears to have remained good throughout the Army's occupation of the area. There is no reason to suspect that these waters have either degraded (beyond localized, temporary sedimentation) or improved.

Water samples were collected from the Eagle River at three locations on two occasions. Sampling locations were Chugach State Park Campground, Bailey Bridge, and the take-out point above the Route Bravo Bridge (Horne Engineering Services Inc., 1996). The first sampling effort occurred on May 26, 1995, and the second in August, 1995. Results of the water sampling can be found in Appendix 9-2. Since problems have not been found, there has been only limited monitoring of surface waters at other locations.

Industrial activities associated with Army occupation on Fort Richardson have had some minor effects on groundwater. These effects are associated with underground storage tanks, facilities where chemicals were stored, and places where chemicals were dumped. These areas are now being monitored intensively, and there has been no indication of deep groundwater pollution. Pollution has been minor, localized, and there has been no significant risk to human health. Recently, water quality has tended to improve as Army restoration projects mitigate earlier damage to the quality of groundwater.

## 9-3 Soil Productivity

Fort Richardson's soils are shallow, immature and deficient in the primary plant nutrients, especially nitrogen and phosphorous. In addition, they often exhibit low water retention capability, making them a primary limiting factor for vegetative growth during dry periods. In depressions and saturated areas, such as wetlands, surface horizons may be covered with partially decomposed herbaceous vegetation called peat. For information related to soil development on Fort Richardson, see Section 7-5.

## 9-4 Biodiversity

Biodiversity is difficult to quantitatively track with the exception of game species and a few other species of high interest. Although the land was degraded when the Army moved onto Fort Richardson, the extent of that degradation and associated damage

<sup>13</sup> Aldo Leopold, *Sand County Almanac*.

to the biodiversity is unknown. Army occupation probably improved overall forest ecosystem biodiversity as timber was allowed to age with the exception of areas in the lowlands that were damaged and set back successionaly.

It is difficult to determine whether the military mission has significantly affected biodiversity. Changes in ecosystems were in all likelihood very localized, and may have affected species abundance for relatively short periods, but probably did not affect overall species richness. This is particularly true when Fort Richardson is compared with other surrounding lowland areas. These areas were developed, and biological diversity was decreased significantly, a fate that probably would have happened to much of Fort Richardson's lands had they not been occupied by the Army.

Due to a lack of historical data on the flora and fauna of Fort Richardson, the discussion above is largely speculative. Implementation of this INRMP will improve the capability of the Army to monitor biodiversity trends in future years.

## 9-5 Support of the Military Mission

At present, Fort Richardson is capable of supporting its military mission. It should be noted, however, that its ability to continue functioning as such is linked directly to its current land and natural resource base. Significant loss of lands and natural resources for a myriad of non-military uses has placed Fort Richardson at the threshold of adequacy for supporting its mission. Any future losses threaten its viability and should be contested strongly.

In many respects, USARAK's mission is highly dependent on natural resources, but at the same time it is moderately taxing on some of those resources. The LRAM program mitigates some damage caused by this mission, and other ITAM programs within this INRMP will prevent or reduce future damage.

Recent reductions in troop strengths, and in the amount of tactical training needed to support these troops, have resulted in significant land improvements. Pending no further land or resource losses, it is anticipated that Fort Richardson, by instituting these progressive land rehabilitation methodologies, will continue to provide a sufficient arena for current and future mission requirements.

## 9-6 Production of Renewable Resources and Recreation Opportunities

### 9-6a Forest Products

There are no significant markets for forest products found on the post at this time. On neighboring Elmendorf AFB, 47 percent of the timber stands are over 175 years old, 30 percent are 50-100 years old (due to fires in the first third of this century), and 23 percent are less than 50 years old (due primarily to military-related losses). No stands are between 100 and 175 years old (Elmendorf AFB, 1994). Much of the older age timber is in "an advanced state of decline" (Elmendorf AFB, 1994), and there is obvious damage from spruce bark beetles (*Dendroctonus rufipennis* (Kirby)) in older stands on Fort Richardson. It would take very intensive timber stand improvement and a considerable amount of time for regrowth to create a significant commercial forest on the post. There is little justification for this course of action at present.

### 9-6b Hunting and Fishing

There is little information on the quality of hunting, fishing, or trapping prior to establishment of Fort Richardson. Similarly, little is known about the status of game species on these lands prior to the 1940s.

Fort Richardson is recognized for its excellent moose hunting program and its popular fishing lakes. The abundance of high quality moose habitat increased after creation of the post. The level of mechanized military activity was great enough to create disturbance needed to maintain good browse quality for these animals. The 1940-1960 period was excellent for moose on Fort Richardson. (Gossweiler and Harkness, 1992) Subsequent forest aging and a decrease in disturbance from military activities, especially mechanized, led to a decline in moose numbers. Relatively large snowfalls during those years also may have contributed to this decline. Little was done to mitigate these losses until Fort Richardson began a moose habitat rehabilitation program in the mid-1970s, which improved the situation somewhat. In recent years, the moose population seems to have stabilized at levels

that can support considerable hunting, but probably less than prior to the 1960s (Gossweiler and Harkness, 1992).

Population trends of other game species have not been fully documented. Fishing opportunities have increased, largely due to fish stocking. There has been a significant change however, in the type of fishing opportunities as wild anadromous fish stocks in the Anchorage area have declined or been replaced, through the stocking of lakes and streams. Trapping is not permitted on Fort Richardson due to safety concerns, conflicts with the military mission, potential problems with local pets, destruction of non-target species, and lack of resources.

### 9-6c Agriculture

Fort Richardson cannot support agriculture. The military mission and emphasis on forest ecosystem management have precluded this option.

### 9-6d Recreation

The addition of trails and facilities on Fort Richardson has improved outdoor recreation options in recent years, and the ability of the land to support such activities has remained relatively unchanged.